July 1, 2011

Via ECFS

Ms. Marlene H. Dortch
Secretary
Federal Communications Commission
445 12th Street, SW
Washington, DC 20554

     Re: PS Docket No. 10-255 – Ex Parte Notice

Dear Ms. Dortch:

Bandwidth.com, Inc. ("Bandwidth.com") had the opportunity to meet with the Public Safety and Homeland Security Bureau on March 29, 2011.   During the meeting staff asked Bandwidth.com to identify and prioritize the industry technical standards it believes are necessary to begin implementation of NG9-1-1.   Bandwidth.com was also asked for its thoughts on how compliance with standards should be articulated and framed within the context of the Commission's current emergency services proceedings.

As discussed at our meeting, Bandwidth.com supports the standards that have been developed by a broad cross section of industry stakeholders under the guidance of the National Emergency Number Association ("NENA").   On June 14, 2011, the NENA executive board officially approved the NG9-1-1 specifications developed as an "end state" standard.[1]   In approving the *i3 Standard*, the NENA board acknowledged that the long-term process of implementing its end state NG9-1-1 architecture will require transitional steps along the way. Bandwidth.com agrees that this is a reasonable and necessary approach.   Among other things, in this submission, Bandwidth.com addresses how the transition to an end state NG9-1-1 network may be best achieved.

Determining how to prioritize the particular standards turns upon some key assumptions concerning the evolution to NG9-1-1 that have not been established by the Commission or the industry as of yet.   For example, as was pointed out at our March 29 meeting, it will be some time before telematics data is delivered with a NG9-1-1 call to the PSAP.   Therefore, the standards associated with delivering supplemental data would not be critical in the early stages of the NG9-1-1 transition.

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[1] The announcement of the adoption of Version 1.0 of NENA Technical Standard 08-003, *Detailed Functional and Interface Specification for the NENA i3 Solution – Stage 3* ("*i3 Standard*") along with the adopted version of the *i3 Standard* itself can be found at: Adoption of i3 Standard

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In this ex parte, Bandwidth.com attempts to respond to staff's requests by laying out what could be considered a high-level transition proposal. In order to prioritize technical standards that have been developed for the initial stages of the evolution to NG9-1-1, Bandwidth.com first sets forth the key assumptions about the rollout of NG9-1-1. With the transition assumption established, a discussion of the corresponding technical standards that will enable that aspect of NG9-1-1 adoption follows.

1. ***Assumption:*** NG9-1-1 Routing Systems will be implemented at a state level and will serve all or virtually all 9-1-1 Authorities in the state. This is consistent with the recommendation of NENA and is the approach that has been adopted by 9-1-1 authorities in Alabama, Connecticut, and Iowa. Texas, because of its size has a concept of regional NG9-1-1 core routing facilities. Each NG9-1-1 region in Texas is as geographically expansive as some full state level implementations.

    Standards: Implementing complete NG9-1-1 systems at the state level rather than more localized system levels will reduce operational complexity. While any 9-1-1 network is inherently a "system of systems," in a NG9-1-1 environment the standards for system-to-system interoperability need not be a major priority. Should neighboring states need to interoperate, some limited interface development may be required. Generally speaking however, standards that address inter-system interfaces are not a critical consideration at the outset of the NG9-1-1 transition.

2. ***Assumption:*** States will select a single primary contractor for the implementation of the statewide system and a single vendor or a set of vendors with pre-existing technical and business relationships will provide all NG9-1-1 components.

    Standards: Because NG9-1-1 will be implemented at the state level and with a single contractor and a single vendor or vendor partnership, standards that address multi-vendor interoperability will not be critical in the early stages. A subset of the full standards could be implemented to meet particular functionality that may be required by a given state.

3. ***Assumption:*** Call handling systems are being upgraded independently of the NG9-1-1 core call routing capabilities. Most of the call handling systems will be IP-capable but will not include NG9-1-1 call header decoding functionality at the outset. While this assumption appears to control in the near term, definitive action by the Commission could significantly alter this assumption and dramatically impact the cost to roll out NG9-1-1. The opportunity to achieve considerable cost savings related to IP call handling is discussed in greater detail below.

    Standards: Because delivery and decoding of call header information, primarily caller location information, will not be required initially in the NG9-1-1 transition, call handling systems will continue to receive automatic number identification ("ANI") as they do today and automatic location identification ("ALI") for location information. Therefore, current standards that address ANI and ALI delivery and presentation will apply and new standards relating to location delivery and decoding of the call header should not be a high priority early in the migration.

4. **_Assumption:_** Legacy Network Gateways ("LNGs") that provide IP conversion and routing capabilities for legacy TDM networks will be implemented to minimize the impact on Originating Service Providers ("OSPs"). As in assumption 3, this current trajectory of NG9-1-1 development is something the Commission could actively steer in a direction that would dramatically reduce the cost of NG9-1-1 deployment. Regulations and standards that aim to reduce the cost implications of LNGs in a NG9-1-1 environment are discussed further below.

   Standards: Neither the Emergency Call Routing Function ("ECRF") nor the Emergency Services Routing Proxy ("ESRP") will be accessed directly by the OSP in the early stages. The only component interfacing with these components on the inbound side is the LNG. Because phased implementations of NG9-1-1 will use the same vendor to supply both the LNG and ECRF, only a subset of the Location to Service Translation ("LoST") protocols need to be implemented and the HTTP Enabled Location Delivery ("HELD") protocol might need to be required.

5. **_Assumption:_** ALI databases will not be phased out and replaced by Location Information Servers ("LIS") in the early stages. As indicated in Assumption 3 above, location information will be delivered via the standard ALI database just as it is today.

   Standards: The HELD interface for LIS will not be required initially.

The assumptions and the corresponding implications for prioritizing NG9-1-1 standards above are based on Bandwidth.com's experience with NG9-1-1 business in the states and current industry trends. A prioritization analysis such as this one is a necessary first step in the Commission's effort to develop effective NG9-1-1 rules. After establishing key assumptions that drive the adoption of certain industry standards, the Commission should next evaluate the message sets within the standard communications protocols.

Bandwidth.com has prioritized the implementation of messages sets in accordance with its view of the current trend in market demands. Each of the standard protocols has a group of message sets that are required for implementation and service enhancements in the near-term. However, each of the standard protocols also includes message sets that will not be used for a very long time, if ever. It is not efficient to dedicate resources to the development of standards for message sets that are unlikely to be used. Therefore, in order for the Commission to conduct a thorough analysis and prioritization of standards, it must also review and prioritize the options within each standard.

Minimizing the cost of NG9-1-1 implementation

As noted, the comments above are based on current market trends. These trends are shaped by current Federal and State regulations. In its NG9-1-1 proceedings the Commission has the opportunity to direct the migration to NG9-1-1 in the most cost effective and accelerated trajectory possible. The highest impact opportunities available to the Commission are as follows:

Deployment of LNGs

A significant cost component of the initial rollout of NG9-1-1 is investment in LNGs as a transitional element. The principle reason to deploy LNGs is to reduce the requirements placed on the OSPs. However, a more complete survey of a wide range of OSPs could alter the perception that this is a necessary cost. For example, Interconnected VoIP providers may welcome the opportunity to interface directly with the NG9-1-1 system using Session Initiation Protocol ("SIP") instead of having to convert from SIP to Centralized Automatic Message Accounting ("CAMA"), which is the case today. Similarly, because wireless carriers' networks are largely SIP-based for internal transport purposes, wireless carriers may also support a transition to a direct SIP interface with the NG9-1-1 system. The final group of OSPs that would have to migrate is the TDM-based carriers. While this group represents a large portion of the subscriber base, that base is shrinking. Therefore, rather than investing in transitional elements based primarily upon a shrinking subscriber base, Bandwidth.com believes a more straightforward path to a native SIP NG9-1-1 system will ultimately be more cost-effective.

Impact of LNG Deployment on Standards: A direct interface to the NG9-1-1 System would require a more complete and well-tested implementation of the SIP protocol for the interface to the ESRP and a more complete and well-tested implementation of the LoST protocol for the interface to the ECRF.

Transition to LIS

Historically, 9-1-1 Authorities have favored the use of the ALI database. Among other reasons, support for ALI tends to be based upon perceptions that the information in the database is highly accurate, that it can be used for "reverse 9-1-1" notifications to the public, and that it helps support the reconciliation of 9-1-1 fees remitted by the OSPs. Further, OSPs have invested in systems and processes to utilize the ALI database. As a result, there has been reluctance to replace ALI and move aggressively toward an early implementation of the NG9-1-1 LIS. However, while maintaining the status quo may alleviate some standards-setting work, retaining TDM-based solutions increases the overall cost of the evolution to NG9-1-1 and negatively impacts the quality of location information.

A regulatory regime that supports the accelerated implementation of the LIS to replace ALI could reduce the cost of the evolution to NG9-1-1 and provide tangible public benefits more quickly. Therefore, Bandwidth.com urges the Commission to enact rules that promote the implementation of NG9-1-1 without the use of legacy components, including an accelerated implementation of LIS and corresponding decommissioning of legacy ALI databases. This action will materially reduce the overall cost of rolling out NG9-1-1 and accelerate the availability of NG9-1-1 features thus improving public safety for the citizens of the country.

New Commission NG9-1-1 Rules:

New rules governing the roles and responsibilities of the various stakeholders must provide sufficient technical detail to be effective yet not so granular that they unnecessarily limit viable, technically innovative, and cost effective options. Using an accepted and defined set of technical standards as

the foundation for such rules accomplishes these ends. A recent example of how these policy goals were successfully achieved by the Commission is the updated TRS/VRS regulations. Bandwidth.com believes the TRS/VRS experience can serve as a useful model for developing and implementing NG9-1-1 regulations as well.

Rules promulgated to roll out NG9-1-1 should, for all stakeholders, answer the following:

- What are the various stakeholder groups and how are they defined?
- What are the technical responsibilities of each group?
    o Defined by the functions they perform
- What information is each stakeholder group responsible for?
    o Quality, accuracy, timeliness, etc.
- What are the approved standards, and, as they evolve, what are the expectations for implementing new or modified standards?
- What degree of flexibility exists for stakeholders to operate within the approved standards?

Bandwidth.com appreciated the opportunity to meet with Commission staff to discuss these important public safety issues in March. The transition to NG9-1-1 is a matter of necessity as the industry continues its shift to a broadband environment. During the course of that transition Bandwidth.com looks forward to continuing to support the Commission's efforts to ensure that emergency services also evolve and support an ever-growing array of broadband communication applications.

Respectfully submitted,

/s/

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